13. A mass spectrometric system for the characterization of substance ions, consisting of

(a) a substance supply system which supplies the substances in recognizable peaks,

(b) an ion source for the ionization of substance molecules from the substance peaks,

(c) a plurality of temporary stores of sufficient size for the temporary storage of all ions from a substance peak,

(d) a mass spectrometer capable of various types of analyses on portions of ions, and

(e) a control system which recognizes the substance peaks, stores the ions of a peak in an empty store, and causes the mass spectrometer to analyze the ions, portion by portion, in various predetermined ways.

14. Device as in claim 13, wherein several temporary stores are present in series between the ion source and mass spectrometer for the collection of ions from several substance peaks.

15. Device as in claim 14, wherein a first of the temporary stores is located in the first stage of a differential pump unit, which is kept at a pressure range between 5×10^{-4} and 5×10^{-2} millibar by a vacuum pump.

16. Device as in claim 13, wherein at least one of the temporary stores is designed as a wire-coiled double helix, with connections to voltages from an RF generator and with terminal reflectors.

17. Device as in claim 16, wherein at least one of the reflectors is a double spiral with a connection to the RF voltage of the RF generator of the double helix.

18. Device as in claim 13, wherein the ions in the temporary stores are subject to a thrust in an axial direction of at least one of the temporary stores through electrical fields.

19. Device as in claim 18, wherein the ion thrust in an axial direction is formed by the pseudopotential which results from a conical design of a temporary store having such thrust.

20. Device as in claim 13, wherein a last of the temporary stores has a gas supply line through which a reactant gas can be fed.

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